



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-0245; Directorate Identifier 2014-NM-135-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede Airworthiness Directive (AD) 2012-24-10, which applies to certain The Boeing Company Model 747-400 and -400F series airplanes. AD 2012-24-10 currently requires installing new software, replacing the duct assembly with a new duct assembly, making wiring changes, and routing certain wire bundles. Since we issued AD 2012-24-10, we have received new reports of intermittent or blank displays of a certain integrated display unit (IDU) that were due to an intermittent false ground not addressed by the software installation or wiring changes required by AD 2012-24-10. This proposed AD would retain the requirements of AD 2012-24-10 and would require installing a new or serviceable pressure switch bracket and altitude pressure switch, and add an airplane to the applicability of the existing AD. We are proposing this AD to prevent IDU malfunctions, which could affect the ability of the flightcrew to read primary displays for airplane attitude, altitude, or airspeed, and consequently reduce the ability of the flightcrew to maintain control of the airplane.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-0245.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-0245; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Ana Martinez Hueto, Aerospace Engineer, Cabin Safety and Environmental Systems Branch, ANM-150S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6592; fax: 425-917-6591; email: ana.m.hueto@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2015-0245; Directorate Identifier 2014-NM-135-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

On November 30, 2012, we issued AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012), for certain The Boeing Company Model 747-400 and -400F series airplanes. AD 2012-24-10 requires installing new software, replacing the duct assembly with a new duct assembly, making wiring changes, and routing certain wire bundles. AD 2012-24-10 resulted from multiple reports of integrated display unit (IDU) malfunctions and mode control panel (MCP) malfunctions. We issued AD 2012-24-10 to prevent IDU malfunctions, which could affect the ability of the

flightcrew to read primary displays for airplane attitude, altitude, or airspeed, and consequently reduce the ability of the flightcrew to maintain control of the airplane.

Actions Since AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012), Was Issued

Since we issued AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012), we have received reports of intermittent or blank displays of a certain IDU in the flight deck that were due to an intermittent false ground not addressed by the software installation or wiring changes required by AD 2012-24-10. The false ground exists on the 25,000 foot altitude analog/discrete signal of the environmental control systems miscellaneous card, which is a signal that is transmitted to the pack temperature controller. This false ground creates a potential to circumvent the control logic by allowing the 3-way valve to switch air sources before an aircraft reaches an altitude of 25,000 feet, defeating the intent of the corrective actions of AD 2012-24-10.

We have determined that the installation of a pressure switch bracket and an altitude pressure switch is needed on the forward side of the station 400 bulkhead to achieve an adequate level of safety. The installation of the altitude pressure switch would change the operating logic for the three-way valve, so that the source for equipment cooling air is changed as the airplane transitions through an altitude of 25,000 feet. Since we issued AD 2012-24-10, Boeing issued Special Attention Service Bulletin 747-21-2532; and Special Attention Service Bulletin 747-21-2533; both dated February 13, 2014; which contain procedures for installing the pressure switch bracket and altitude pressure switch discussed previously.

Since we issued AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012), Boeing also issued a revision to Boeing Alert Service Bulletin 747-21A2523, Revision 1, dated October 3, 2011 (which was referenced as a source of service information in AD 2012-24-10). Boeing Alert Service Bulletin 747-21A2523, Revision 2, dated June 7, 2013, was issued to correct wiring instructions for

747-400BCF airplanes that provide crew rest heat below a 25,000 foot altitude, and to add an airplane configuration having variable number RT061 as Group 21 to the effectivity. The airplane that was added was recently converted from a passenger to a freighter configuration, which this proposed AD addresses. Since this proposed AD adds this new airplane group to the applicability, we have added paragraph (j) to this proposed AD, which provides new compliance times for Group 21 airplanes.

Related Service Information under 1 CFR part 51

Boeing issued Boeing Alert Service Bulletin 747-21A2523, Revision 2, dated June 7, 2013. This service information describes procedures for changing the wiring and operating logic of the equipment cooling three-way valve and replacing the existing duct assembly with a new duct assembly on the main distribution manifold of the air conditioning system.

Boeing also issued Boeing Special Attention Service Bulletin 747-21-2532, dated February 13, 2014. This service information describes procedures for installing an altitude pressure switch on the forward side of the station 400 bulkhead for the three-way valve of the equipment cooling system. Boeing also issued Boeing Special Attention Service Bulletin 747-21-2533, dated February 13, 2014. This service information describes procedures for adding a second altitude signal to the switching logic for the three-way valve to provide a second, independent, altitude signal for the equipment cooling system.

For information on the procedures and compliance times, see this service information. This service information is reasonably available; see ADDRESSES for ways to access this service information.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs.

Proposed AD Requirements

This proposed AD would retain all of the requirements of AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012.) This proposed AD would also require installing a pressure switch bracket and altitude pressure switch, and would add an airplane to the applicability.

Costs of Compliance

We estimate that this proposed AD affects 33 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Duct assembly and replacement wiring changes (retained actions from AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012))	44 work-hours X \$85 per hour = \$3,740	\$20,121	\$23,861	\$787,413
Software changes (retained actions from AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012))	3 work-hours X \$85 per hour = \$255	\$0	\$255	\$8,415
Altitude pressure switch installation (new proposed action)	13 work-hours X \$85 per hour = \$1,105	\$5,230	\$6,335	\$209,055

According to the manufacturer, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012), and adding the following new AD:

The Boeing Company: Docket No. FAA-2015-0245; Directorate Identifier 2014-NM-135-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012).

(c) Applicability

This AD applies to The Boeing Company Model 747-400 and -400F series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 747-21A2523, Revision 2, dated June 7, 2013.

(d) Subject

Air Transport Association (ATA) of America Code 21, Air Conditioning; 31, Instruments.

(e) Unsafe Condition

This AD was prompted by reports of intermittent or blank displays of a certain integrated display unit (IDU) in the flight deck. We are issuing this AD to prevent IDU malfunctions, which could affect the ability of the flightcrew to read primary displays for airplane attitude, altitude, or airspeed, and consequently reduce the ability of the flightcrew to maintain control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Retained Software Update

This paragraph restates the requirements of paragraph (g) of AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012), with revised service information. Within 12 months after January 16, 2013 (the effective date of AD 2012-24-10), except as provided by paragraph (j) of this AD: Install integrated display system software, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-21A2523, Revision 1, dated October 3, 2011; or Boeing Alert Service Bulletin 747-21A2523, Revision 2, dated June 7, 2013. As of the effective date of this AD, only Boeing Alert Service Bulletin 747-21A2523, Revision 2, dated June 7, 2013, may be used to accomplish the actions required by this paragraph.

Note 1 to paragraph (g) and (j) of this AD: Boeing Alert Service Bulletin 747-21A2523, Revision 1, dated October 3, 2011; and Boeing Alert Service Bulletin 747-21A2523, Revision 2, dated June 7, 2013; refer to Boeing Service Bulletin 747-31-2426, dated July 29, 2010 (for airplanes with Rolls-Royce engines); Boeing Service Bulletin 747-31-2427, dated July 29, 2010 (for airplanes with General Electric engines); and Boeing Service Bulletin 747-31-2428, dated July 29, 2010 (for airplanes with Pratt & Whitney engines); as additional sources of guidance for the software installation specified by paragraph (g) of this AD. Boeing Service Bulletin 747-31-2426, dated July 29, 2010; Boeing Service Bulletin 747-31-2427, dated July 29, 2010; and Boeing Service Bulletin 747-31-2428, dated July 29, 2010; are not incorporated by reference in this AD.

(h) Retained Duct Assembly Replacement and Wiring Changes

This paragraph restates the requirements of paragraph (h) of AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012), with revised service information. Within 60 months after January 16, 2013 (the effective date of AD 2012-24-10), except as provided by paragraph (j) of this AD: Replace the duct assembly with a new duct assembly, do wiring changes, and route certain wire bundles, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-21A2523, Revision 1, dated October 3, 2011; or Boeing Alert Service Bulletin 747-21A2523, Revision 2, dated June 7, 2013. As of the effective date of this AD, only Boeing Alert Service Bulletin 747-21A2523, Revision 2, dated June 7, 2013, may be used to accomplish the actions required by this paragraph.

(i) New Installation of Pressure Switch Bracket and Altitude Pressure Switch

Within 60 months after the effective date of this AD: Install a new or serviceable pressure switch bracket and a new or serviceable altitude pressure switch on the forward side of the station 400 bulkhead, do wiring changes, route certain wire bundles, install a new hose assembly, and perform a leak check and a functional logic test, in accordance with the Accomplishment Instructions of the service information specified in paragraph (i)(1) or (i)(2) of this AD, as applicable.

(1) For Model 747-400F series airplanes: Boeing Alert Service Bulletin 747-21-2532, dated February 13, 2014.

(2) For Model 747-400BCF series airplanes: Boeing Alert Service Bulletin 747-21-2533, dated February 13, 2014.

(j) Actions for Group 21 Airplanes

For Group 21 airplanes, as identified in Boeing Alert Service Bulletin 747-21A2523, Revision 2, dated June 7, 2013, do the actions specified in paragraphs (j)(1) and (j)(2) of this AD, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-21A2523, Revision 2, dated June 7, 2013.

(1) Within 12 months after the effective date of this AD, install integrated display system software.

(2) Within 60 months after the effective date of this AD, replace the duct assembly with a new duct assembly, do wiring changes, and route certain wire bundles.

(k) Credit for Previous Actions

This paragraph provides credit for actions required by paragraphs (g) and (h) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 747-21A2523, Revision 1, dated October 3, 2011.

(l) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (m)(1) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) AMOCs approved for AD 2012-24-10, Amendment 39-17280 (77 FR 73908, December 12, 2012), are approved as AMOCs for the corresponding provisions of paragraphs (g) and (h) of this AD.

(m) Related Information

(1) For more information about this AD, contact Ana Martinez Hueto, Aerospace Engineer, Cabin Safety and Environmental Systems Branch, ANM-150S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6592; fax: 425-917-6591; email: ana.m.hueto@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on February 2, 2015.

Dionne Palermo,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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